

A noise generator for generating multi-octave, high-level, millimeter- and submillimeter-wave noise is disclosed. According to one embodiment of the invention, the noise generator includes: a microwave noise source; a microwave power-amplifier chain; a level-set attenuator; a frequency multiplier; and a transmission structure. The output of the generator has a high-intensity noise power spectrum over a frequency range from about 60 GHz to about 1 THz. This type of noise is particularly suited and has sufficient power for testing and calibrating millimeter- and submillimeter-wave components, devices, and circuits; material evaluation and characterization; and for use as a broadband millimeter- and submillimeter-wave noise source for a Fourier Transform Spectrometer.

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